U.S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS
HARVEY MT., MERRILL, AND SUGAR LOAF BURNS
LASSEN NATIONAL FOREST
RECONNAISSANCE SURVEY
AUGUST AND OCTOBER, 1957

INTRODUCTION

On August 7 and again on October 18 an aerial reconnaissance survey was flown, covering the 3 major 1955 burns on the Lassen National Forest and adjacent private lands. In the first flight, the crew consisted of R.C. Hall and B.E. Wickman of the California Forest and Range Experiment Station, as observers, and Herb Sutton of H&H Flying Service, Redding, as pilot. The second crew had Wickman as observer and Red Turner, U.S.F.S. as pilot. The perimeter of each burn was circled twice at 500 feet, at 85 miles per hour. Insect-killed trees were easily discernible and a count was made of the number of recent insect-killed pine of merchantable size. Some of this loss was of scattered nature in green timber around the edge of the burn, and the remainder was loss of weakened trees within the burned area.

All three areas were primarily composed of mature pine type, with some pure white fir at higher elevations of the burns. They varied greatly in acreage burned. The largest burn, Merrill Flat, covered approximately 20,000 acres on the west side of Eagle Lake. Next in size was the Harvey Mt. Burn on the Bogard Ranger District covering approximately 200 acres. The smallest burn, approximately 80 acres, occurred on Sugar Loaf Peak on the Hat Creek Ranger District. All three fires occurred in late summer of 1955.

INSECT AND HOST SPECIES

The principal insects and their hosts found on the burns during a ground check in 1956 were: western pine beetle, Dendroctonus brevicomis Lec. and the red turpentine beetle, Dendroctonus valens Lec. attacking ponderosa pine; the mountain pine beetle, Dendroctonus monticolae Hopk. attacking sugar pine, and possibly the Jeffrey pine beetle, Dendroctonus jeffreyi Hopk. attacking Jeffrey pine. Killing was also noticed in white fir, probably caused by Scolytus ventralis Lec.

STATUS OF THE INFESTATIONS

The loss occurring around each burn was mostly of scattered nature, with grouping of trees noticeable only on the largest of the burns. Below is a tabulation of the approximate number of merchantable pine counted from the air.

Burn	Approximate No. of Trees	
	August	October
Sugar Loaf	12	10
Harvey Mt.	25	25
Merrill Flat	200	200+

Most of these trees are probably abandoned by the insects now, but would still have salvage value. They also serve as an indicator of the insect-caused loss buildup around the burns.

The following is a summary of conditions found on each burn:

1. Sugar Loaf Burn.--Some scattered loss in sugar pine and ponderosa pine mostly on the west edge, believed to be on Fruit Growers Supply Company property. Several of the sugar pine were apparently salvaged by Fruit Growers Supply Company prior to the second flight. The area was ground checked by R.C. Hall in October who reported very little insect activity on the burn.

2. Harvey Mt.--Scattered loss occurring in ponderosa pine on the lower edges, white fir loss on the upper edge. No serious grouping of the faded trees was noted.

3. Merrill Flat.--Scattered loss was occurring mainly around the perimeter and in islands inside the burn. One exception was a group of 25 ponderosa pine in green timber outside the perimeter of the north end of the burn at Penitentiary Flat. This area was flooded in early spring, probably contributing to the insect kill. Other grouping noticed within the burn included a small group by the road at the Lava Beds near Upper Brockman Flat, several small groups north of Upper Merrill Flat, and some grouping near Lower Merrill Flat. Ponderosa pine, probably some Jeffrey pine and white fir on the upper slopes, are being killed. On 8,500 acres of Government land checked by Forest Service personnel in November, only 90 insect-killed trees of merchantable size were found.

DISCUSSION

Insect losses occurring on the 3 burns were mostly scattered, with little evidence of grouping outside of the burn perimeter. A good deal of the credit for this condition goes to the excellent salvage programs carried out on all 3 areas after the fires occurred. Losses can still increase, however, and all the burns should be watched closely with a view to salvaging or otherwise controlling beetles in infested trees, especially where group-killing is taking place. Where trees cannot be salvaged in time to destroy the broods, other direct methods such as fell-burn or fell-spray can be used. To be effective, control operations will require well trained spotters and should be carried out in late fall and early spring so that trees containing bark-beetle broods are not left in the woods to infest green trees next summer. The burns will be

reflown in the spring of 1958 and ground checked by Station personnel. The spring flight and subsequent ground check should show whether there is an increase in bark-beetle activity and can be a guideline for future surveys and any necessary control measures.

SUMMARY

On August 7, 1957, and again on October 18, Experiment Station personnel flew a reconnaissance-type survey of the 3 major 1955 burns which occurred on the Lassen National Forest. Scattered insect-killed pine of merchantable size occurred along the perimeter of all three burns; but there was light loss in the green timber outside of the perimeter, and only several areas were noted with a grouping of loss. The salvage programs of 1955 and 1956 seem to have prevented serious buildups of infestations, but the burns should be kept under close watch to determine if further control action is necessary.

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